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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,986	09/14/2000	Harold Rosen	pd-2000083	8909

20991 7590 07/31/2006

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PATENT DOCKET ADMINISTRATION RE/R11/A109
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EXAMINER

LY, NGHI H

ART UNIT PAPER NUMBER

2617

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,986

Applicant(s)

ROSEN ET AL.

Examiner

Nghi H. Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-15,17-21,23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-15,17-21,23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

2. a. Applicant's arguments with respect to claims 1, 4-15, 17-21, 23 and 24 have been considered but are moot in view of the new ground(s) of rejection.

b. Applicant's arguments filed 05/15/06 have been fully considered but they are not persuasive.

On page 5 of Applicant's argument, Applicant argues that Durvasula does not teach "of non-interfering beam is present and thus no unsuppressed portions of the beam are described".

The examiner, however, disagrees. Durvasula does indeed teach the selective shaping applicant's claimed limitation (see Durvasula, column 2, lines 24-27, see "*the reflector is shaped to suppress primary-beam sidelobes*" and "*the reflector is specially shaped with a surface contour which directs lobes of the primary beam in directions away from the axis of the secondary beam*". That is, only the primary-beam's sidelobes is selected (not secondary beam 42) and it reads on applicant's "*the*

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selective shaping" and "secondary beam 42" reads on applicant's "non-interfering beam")

On pages 6 and 7 of Applicant's argument, Applicant argues that Durvasula does not teach selectively suppressing a side lobe of a first beam having a first resource by selectively reshaping the antenna surface at interference locations and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion so that the non-suppressed portion of the first beam aligns with other beams having the second resource cell and a side lobe suppressed portion aligns with the first resource.

The Examiner, however, disagrees. Durvasula does indeed teach selectively suppressing a side lobe of a first beam having a first resource (see fig.5, beam 38 and beam 42) by selectively reshaping the antenna surface (column 2, lines 9-13, see "*the reflector has been shaped specifically for coverage*" and column 2, lines 13-30, see "*the reflector is reshaped to suppress*") at interference locations (column 1, lines 39-52, see "***primary beam** may interfere with the propagation of signals from the main lobe of the secondary beam*". In Durvasula, the interference locations are formed when two beams are interfered with each other) and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion (see column 1, lines 39-52, see "***primary beam** may interfere with the propagation of signals from the main lobe of the secondary beam*" and column 2, lines 8-14, see "*coverage by the primary beam*" and the "*coverage*" of Durvasula reads on applicant's "interference

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locations") and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion (column 2, lines 24-27, see "*the reflector is shaped to suppress primary-beam sidelobes*" and "*the reflector is specially shaped with a surface contour which directs lobes of the primary beam in directions away from the axis of the secondary beam*". That is, **only** the primary-beam's sidelobes is selected (not secondary beam 42) and it reads on applicant's "*maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion*") so that the non-suppressed portion of the first beam aligns with other beams having the second resource cell and a side lobe suppressed portion aligns with the first resource (column 1, lines 55-61, see "*maintaining isolation between the respective beams*" and column 4, lines 48-53, see "*the angular spacing among the sidelobes 66B of the primary radiation pattern 66 are selected to provide for essentially zero radiation in the direction of the main lobe 68A of the secondary radiation pattern 68 by appropriate shaping of the surface contour of the reflector*". In addition, see fig.3, and fig.5, "*feeds elements 52*" read on applicant's "*other beams*").

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4, 5, 7-13, 15, 17-19, 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durvasula et al (US 6,137,451) in view of Colella et al (US 6,781,968).

Regarding claims 1, 9, 15, 17 and 21, Durvasula teaches a method of preventing interference (see column 2, lines 23-27, see "*minimize interference*") in a communication system (see system of fig.1) comprising, the steps of:

Generating a fixed pattern (see fig.1, items 40 and 44 and they read on applicant's "*a fixed pattern*") in a service area from a high altitude communications device (see fig.1, satellite 22 and it reads on applicant's "*a high altitude communications device*"), the pattern having a plurality of first resource cell and a second resource cell having a resource different than the plurality of the first resource cells (see fig.1, feeds 30 and 32 and they read on applicant's "*a plurality of first resource cell and a second resource cell*" and see fig.1, footprints 40 and 44 and column 4, line 66 to column 5, line

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5, see *"the feeds 30 and 32 are at the same frequency or at different frequencies, as well as at the same polarization or at different polarizations".* In addition, Application specification page 2, lines 10-11, disclose *"beam having different system resources such as frequencies or polarizations"*), selectively suppressing a side lobe of a first beam having a first resource (see fig.5, beam 38 and beam 42) by selectively reshaping the antenna surface (column 2, lines 9-13, see *"the reflector has been shaped specifically for coverage"* and column 2, lines 13-30, see *"the reflector is reshaped to suppress"*) at interference locations (column 1, lines 39-52, see *"**primary beam** may interfere with the propagation of signals from the main lobe of the secondary beam"*). In Durvasula, the interference locations are formed when two beams are interfered with each other) and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion (see column 1, lines 39-52, see *"**primary beam** may interfere with the propagation of signals from the main lobe of the secondary beam"* and column 2, lines 8-14, see *"coverage by the primary beam"* and the *"coverage"* of Durvasula reads on applicant's *"interference locations"*) and maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-suppressed portion (column 2, lines 24-27, see *"the reflector is shaped to suppress primary-beam sidelobes"* and *"the reflector is specially shaped with a surface contour which directs lobes of the primary beam in directions away from the axis of the secondary beam"*. That is, only the primary-beam's sidelobes is selected (not secondary beam 42) and it reads on applicant's *"maintaining a shape of the antenna in non-interference locations to form a suppressed portion and a non-*

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suppressed portion") so that the non-suppressed portion of the first beam aligns with other beams having the second resource cell and a side lobe suppressed portion aligns with the first resource (column 1, lines 55-61, see "*maintaining isolation between the respective beams*" and column 4, lines 48-53, see "*the angular spacing among the sidelobes 66B of the primary radiation pattern 66 are selected to provide for essentially zero radiation in the direction of the main lobe 68A of the secondary radiation pattern 68 by appropriate shaping of the surface contour of the reflector*". In addition, see fig.3, and fig.5, "*feeds elements 52*" read on applicant's "*other beams*").

Durvasula does not specifically disclose a fixed reuse pattern.

Colella teaches a fixed reuse pattern (see fig.1 and column 11, line 57 to column 12, line 8, see "*reuse pattern*").

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide the teaching of Colella into the system of Durvasula in order to provide regional wireless communication (see Colella, column 1, lines 20-22).

Regarding claims 4, 12 and 18, Durvasula further teaches the first resource and the second resource comprise a frequency (column 5, lines 1-4, see "*frequency*").

Regarding claims 5, 13 and 19, Durvasula further teaches the first resource and the second resource comprise polarization (see column 5, lines 1-4, see "*polarization*").

Regarding claims 7, 10 and 23, Durvasula further teaches the high altitude communication device comprises a satellite (see fig.1, satellite 22).

Regarding claims 8 and 11, the combination of Durvasula and Colella further teaches the high altitude communication device comprises a stratospheric platform (see Colella, fig.1, stratospheric platform 101 and column 6, lines 65-67, see "*stratospheric platform*").

Regarding claim 24, the combination of Durvasula and Colella further teaches generating a fixed reuse pattern comprises generating the fixed reuse pattern a stratospheric platform (see Colella, fig.1, stratospheric platform 101 and column 11, line 57 to column 12, line 8, see "*reuse pattern*", also column 6, lines 65-67, see "*stratospheric platform*").

6. Claims 6, 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durvasula et al (US 6,137,451) in view of Colella et al (US 6,781,968) and further in view of Official notice.

Regarding claims 6, 14 and 20, the combination of Durvasula and Colella teaches claims 1, 9, 15 and 21. The combination of Durvasula and Colella does not specifically disclose the first resource and the second resource comprise an orthogonal code. However, the examiner takes Official notice that such feature as recited is very well known in the art.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to modify the above teaching of Durvasula and Colella for providing a system so the first resource and the second resource comprise an orthogonal code.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571) 272-7911. The examiner can normally be reached on 8:30 am-5:30 pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nghi H. Ly



CHARLES APPIAH
PRIMARY EXAMINER